

CLAIMS:

1.

A method of handling an empty beverage container having opposed first and second ends of different properties, the container having an axis extending between the first and second ends, said first end defined as a bottom end of the container and said second end defined as a mouth region of the container, the method comprising the step of moving
5 the container, from a return vending machine inlet, in a direction towards an outlet thereof,

wherein the method comprises the further steps of:

- detecting by means of a video camera the container when moved in a lying posture into or past a detection zone of the video camera and the manner by which the container

10 is inserted at said inlet,

- determining whether the container is moved into the detection zone with its first end first or with its second end first, and

- either transporting the container to said outlet if it is delivered into the detection zone with its first end first,

15 - or causing the container to be returned to the inlet if it is delivered into the detection zone with its second end first.

2.

A method according to claim 1, wherein upon return of the container to the inlet, the further step of: issuing a prompt to a return vending machine user to remove the container and reinsert it into the inlet with its first end first.

3.

A method according to claim 1 or 2, wherein the method comprises the further step of determining a most suitable video image obtained by the video camera with a view to recognition and identification of the container.

4.

A method according to claim 1, 2 or 3, wherein the method comprises the further steps of observing any longitudinal markings in the video image of a container being a bottle, emitting a signal indicating that the container fully or partly contains liquid or another substance, and possibly returning the container to the user for emptying prior to

5 reinsertion.

5.

A method according to claim 1, wherein said manner of insertion is related to orientation of the container.

6.

A return vending machine device for detecting empty beverage containers to be reused or recycled, comprising a video analyser for video image analysis of a container moved into or past a detection zone, the video analyser being connected to a video camera, wherein said analyser has a calculator component for determining, when the container moves in a lying posture into the detection zone, whether it enters the video camera field of view with its first end first, viz. its bottom end, or its second end first, viz. its mouth region, and wherein the device further has a control component capable of causing the container either to be returned to a device inlet if it is entered into the detection zone with its second end first, means being provided to cause a device user to
5 reinsert the container with its first end first, or if it is entered into the device with its first end first to feed it past the detection zone and onwards to a discharge station.

7.

A return vending machine device according to claim 6, wherein a prompt is made to the device user to cause said reinsertion of a returned container, said prompt being provided by a signaling means signaling the need to turn returned the container so that it is inserted bottom first.

8.

A return vending machine device according to claim 6 or 7, wherein a position detector is provided, capable of determining position and movement of the container in a viewing region of the video camera on basis of continuous detection of position and movement of the container in the video image.

9.

A return vending machine device according to claim 6, 7 or 8, wherein the video analyser includes a circuit capable of determining, with a view to recognition and identification of a container, a best video image of video images taken of the container.

10.

A return vending machine device according to anyone of claims 6 – 9, when applied to a container in the form of a bottle, wherein the analyser contains an observation circuit adapted to observe any longitudinal markings in a video image of the bottle, said observation circuit capable of emitting a signal when such markings are observed to
5 indicate that the bottle contains fully or partly liquid or other substance.